

SEQUENCE LISTING

<110> Pan, Yang
Lora, Jose M.

<120> NOVEL INTEGRIN ALPHA SUBUNIT AND USES THEREOF

<130> MBIO1999-017CP1B(M) (formerly 07334-275001)

<140> US 09/561,263

<141> 2000-04-27

<150> US 09/322,790

<151> 1999-05-28

<160> 40

<170> FastSEQ for Windows Version 3.0

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<211> 5042

<212> DNA

<213> Homo sapiens

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<221> CDS

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Pro Glu Glu Leu Lys Asn His Gly Ala Tyr Leu Gly Tyr Thr Val Thr	
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Tyr Phe Gly Ser Glu Ile Thr Ser Val Asp Ile Asp Gly Asp Gly Val	
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Thr Asp Val Leu Leu Val Gly Ala Pro Met Tyr Phe Asn Glu Gly Arg	
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Tyr Ile Phe His Gly Phe Arg Gly Ser Ile Leu Lys Thr Pro Lys Gln	
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Val Ser Tyr Pro Phe Phe Arg Ala Lys Ala Lys Val Ala Phe Arg Leu	
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Asn Leu Trp Leu Arg Ser Leu Lys Ala Leu Lys Tyr Lys Ser Met Lys	

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Thr	Tyr	Met	Asp	Ile	Val	Ile	Val	Leu	Asp	Gly	Ser	Asn	Ser	Ile	Tyr	
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Pro	Trp	Val	Glu	Val	Gln	His	Phe	Leu	Ile	Asn	Ile	Leu	Lys	Lys	Phe	
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Asp	Val	Val	His	Glu	Phe	His	Leu	Asn	Asp	Tyr	Arg	Ser	Val	Lys	Asp	
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Glu	Ser	His	Asp	Ser	Pro	Asp	Leu	Glu	Lys	Val	Ile	Gln	Gln	Ser	Glu					
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Arg	Arg	Gly	Ile	Asn	Pro	Glu	Thr	Phe	Leu	Asn	Glu	Ile	Lys	Tyr	Ile					
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gcc	agt	gac	cct	gat	gac	aag	cac	ttc	ttc	aat	gtc	act	gat	gag	gct	1008				
Ala	Ser	Asp	Pro	Asp	Asp	Lys	His	Phe	Phe	Asn	Val	Thr	Asp	Glu	Ala					
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gcc	ttg	aag	gac	att	gtc	gat	gcc	ctg	ggg	gac	aga	atc	ttc	agc	ctg	1056				
Ala	Leu	Lys	Asp	Ile	Val	Asp	Ala	Leu	Gly	Asp	Arg	Ile	Phe	Ser	Leu					
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gaa	ggc	acc	aac	aag	aac	gag	acc	tcc	ttt	ggg	ctg	gag	atg	tca	cag	1104				
Glu	Gly	Thr	Asn	Lys	Asn	Glu	Thr	Ser	Phe	Gly	Leu	Glu	Met	Ser	Gln					
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acg	ggc	ttt	tcc	tcg	cac	gtg	gtg	gag	gat	ggg	gtt	ctg	ctg	gga	gcc	1152				
Thr	Gly	Phe	Ser	Ser	His	Val	Val	Glu	Asp	Gly	Val	Leu	Leu	Gly	Ala					
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gtc	ggt	gcc	tat	gac	tgg	aat	gga	gct	gtg	cta	aag	gag	acg	agt	gcc	1200				
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Gly	Lys	Val	Ile	Pro	Leu	Arg	Glu	Ser	Tyr	Leu	Lys	Glu	Phe	Pro	Glu					
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gag	ctc	aag	aac	cat	ggt	gca	tac	ctg	ggg	tac	aca	gtc	aca	tcg	gtc	1296				
Glu	Leu	Lys	Asn	His	Gly	Ala	Tyr	Leu	Gly	Tyr	Thr	Val	Thr	Ser	Val					
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gtg	tcc	tcc	agg	cag	ggg	cga	gtg	tac	gtg	gcc	gga	gcc	ccc	cgg	ttc	1344				
Val	Ser	Ser	Arg	Gln	Gly	Arg	Val	Tyr	Val	Ala	Gly	Ala	Pro	Arg	Phe					
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Asn	His	Thr	Gly	Lys	Val	Ile	Leu	Phe	Thr	Met	His	Asn	Asn	Arg	Ser					
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ctc	acc	atc	cac	cag	gct	atg	cgg	ggc	cag	cag	ata	ggc	tct	tac	ttt	1440				
Leu	Thr	Ile	His	Gln	Ala	Met	Arg	Gly	Gln	Gln	Ile	Gly	Ser	Tyr	Phe					
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ggg	agt	gaa	atc	acc	tcg	gtg	gac	atc	gac	ggc	gac	ggc	gtg	act	gat	1488				
Gly	Ser	Glu	Ile	Thr	Ser	Val	Asp	Ile	Asp	Gly	Asp	Gly	Val	Thr	Asp					
			485						490						495					

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aca gcc tca gag ctg gct acc ggc ctc cag tat ttt ggc tgc agc atc Thr Ala Ser Glu Leu Ala Thr Gly Leu Gln Tyr Phe Gly Cys Ser Ile 595 600 605	1824
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gga gcc ctt ggc aac gct gtg att ctg tgg tcc cgc cca gtg gtt cag Gly Ala Leu Gly Asn Ala Val Ile Leu Trp Ser Arg Pro Val Val Gln 625 630 635 640	1920
atc aat gcc agc ctc cac ttt gag cca tcc aag atc aac atc ttc cac Ile Asn Ala Ser Leu His Phe Glu Pro Ser Lys Ile Asn Ile Phe His 645 650 655	1968
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gtt ggc atc aga tac aac gcc acc atg gat gag agg cgg tat aca ccg Val Gly Ile Arg Tyr Asn Ala Thr Met Asp Glu Arg Arg Tyr Thr Pro 690 695 700	2112
agg gcc cac ctg gac gag ggc ggg gac cga ttc acc aac aga gcc gta Arg Ala His Leu Asp Glu Gly Gly Asp Arg Phe Thr Asn Arg Ala Val 705 710 715 720	2160
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Leu Asp Thr Ala Asp Tyr Val Lys Pro Val Thr Phe Ser Val Glu Tyr	
740 745 750	
tcc ctg gag gac cct gac cat ggc ccc atg ctg gac gac ggc tgg ccc	2304
Ser Leu Glu Asp Pro Asp His Gly Pro Met Leu Asp Asp Gly Trp Pro	
755 760 765	
acc act ctc aga gtc tcg gtg ccc ttc tgg aac ggc tgc aat gag gat	2352
Thr Thr Leu Arg Val Ser Val Pro Phe Trp Asn Gly Cys Asn Glu Asp	
770 775 780	
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Glu His Cys Val Pro Asp Leu Val Leu Asp Ala Arg Ser Asp Leu Pro	
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acg gcc atg gag tac tgc cag agg gtg ctg agg aag cct gcg cag gac	2448
Thr Ala Met Glu Tyr Cys Gln Arg Val Leu Arg Lys Pro Ala Gln Asp	
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Cys Ser Ala Tyr Thr Leu Ser Phe Asp Thr Thr Val Phe Ile Ile Glu	
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agc aca cgc cag cga gtg gcg gtg gag gcc aca ctg gag aac agg ggc	2544
Ser Thr Arg Gln Arg Val Ala Val Glu Ala Thr Leu Glu Asn Arg Gly	
835 840 845	
gag aac gcc tac agc acg gtc cta aat atc tcg cag tca gca aac ctg	2592
Glu Asn Ala Tyr Ser Thr Val Leu Asn Ile Ser Gln Ser Ala Asn Leu	
850 855 860	
cag ttt gcc agc ttg atc cag aag gag gac tca gac ggt agc att gag	2640
Gln Phe Ala Ser Leu Ile Gln Lys Glu Asp Ser Asp Gly Ser Ile Glu	
865 870 875 880	
tgt gtg aac gag gag agg agg ctc cag aag caa gtc tgc aac gtc agc	2688
Cys Val Asn Glu Glu Arg Arg Leu Gln Lys Gln Val Cys Asn Val Ser	
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Tyr Pro Phe Phe Arg Ala Lys Ala Lys Val Ala Phe Arg Leu Asp Phe	
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Ala Gly Ser Asp Ser Asn Glu Arg Asp Ser Thr Lys Glu Asp Asn Val	
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gcc ccc tta cgc ttc cac ctc aaa tac gag gct gac gtc ctc ttc acc	2880
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Arg Ser Ser Ser Leu Ser His Tyr Glu Val Lys Pro Asn Ser Ser Leu	
965 970 975	
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Glu Arg Tyr Asp Gly Ile Gly Pro Pro Phe Ser Cys Ile Phe Arg Ile	
980 985 990	
cag aac ttg ggc ttg ttc ccc atc cac ggg atg atg atg aag atc acc	3024
Gln Asn Leu Gly Leu Phe Pro Ile His Gly Met Met Met Lys Ile Thr	
995 1000 1005	
att ccc atc gcc acc agg agc ggc aac cgc cta ctg aag ctg agg gac	3072
Ile Pro Ile Ala Thr Arg Ser Gly Asn Arg Leu Leu Lys Leu Arg Asp	
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Phe Leu Thr Asp Glu Ala Asn Thr Ser Cys Asn Ile Trp Gly Asn Ser	
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Thr Glu Tyr Arg Pro Thr Pro Val Glu Glu Asp Leu Arg Arg Ala Pro	
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cag ctg aat cac agc aac tct gat gtc gtc tcc atc aac tgc aat ata	3216
Gln Leu Asn His Ser Asn Ser Asp Val Val Ser Ile Asn Cys Asn Ile	
1060 1065 1070	
cgg ctg gtc ccc aac cag gaa atc aat ttc cat cta ctg ggg aac ctg	3264
Arg Leu Val Pro Asn Gln Glu Ile Asn Phe His Leu Leu Gly Asn Leu	
1075 1080 1085	
tgg ttg agg tcc cta aaa gca ctc aag tac aaa tcc atg aaa atc atg	3312
Trp Leu Arg Ser Leu Lys Ala Leu Lys Tyr Lys Ser Met Lys Ile Met	
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Val Asn Ala Ala Leu Gln Arg Gln Phe His Ser Pro Phe Ile Phe Arg	
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Asp Trp Gln Val Pro Ile Trp Ile Ile Val Gly Ser Thr Leu Gly Gly	
1140 1145 1150	
ctc cta ctg ctg gcc ctg ctg gtc ctg gca ctg tgg aag ctc ggc ttc	3504
Leu Leu Leu Leu Ala Leu Leu Val Leu Ala Leu Trp Lys Leu Gly Phe	
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	-5					1				5					10
Ile	Pro	Gly	Ser	Arg	Thr	Ala	Phe	Phe	Gly	Tyr	Thr	Val	Gln	Gln	His
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Asp	Ile	Ser	Gly	Asn	Lys	Trp	Leu	Val	Val	Gly	Ala	Pro	Leu	Glu	Thr
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Asn	Gly	Tyr	Gln	Lys	Thr	Gly	Asp	Val	Tyr	Lys	Cys	Pro	Val	Ile	His
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Gly	Asn	Cys	Thr	Lys	Leu	Asn	Leu	Gly	Arg	Val	Thr	Leu	Ser	Asn	Val
	60					65					70				
Ser	Glu	Arg	Lys	Asp	Asn	Met	Arg	Leu	Gly	Leu	Ser	Leu	Ala	Thr	Asn
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Pro	Lys	Asp	Asn	Ser	Phe	Leu	Ala	Cys	Ser	Pro	Leu	Trp	Ser	His	Glu
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Cys	Gly	Ser	Ser	Tyr	Tyr	Thr	Thr	Gly	Met	Cys	Ser	Arg	Val	Asn	Ser
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Thr	Tyr	Met	Asp	Ile	Val	Ile	Val	Leu	Asp	Gly	Ser	Asn	Ser	Ile	Tyr
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Pro	Trp	Val	Glu	Val	Gln	His	Phe	Leu	Ile	Asn	Ile	Leu	Lys	Lys	Phe
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Tyr	Ile	Gly	Pro	Gly	Gln	Ile	Gln	Val	Gly	Val	Val	Gln	Tyr	Gly	Glu
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Asp	Val	Val	His	Glu	Phe	His	Leu	Asn	Asp	Tyr	Arg	Ser	Val	Lys	Asp
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Glu	Ser	His	Asp	Ser	Pro	Asp	Leu	Glu	Lys	Val	Ile	Gln	Gln	Ser	Glu
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Arg	Asp	Asn	Val	Thr	Arg	Tyr	Ala	Val	Ala	Val	Leu	Gly	Tyr	Tyr	Asn
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Arg	Arg	Gly	Ile	Asn	Pro	Glu	Thr	Phe	Leu	Asn	Glu	Ile	Lys	Tyr	Ile
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Ala	Ser	Asp	Pro	Asp	Asp	Lys	His	Phe	Phe	Asn	Val	Thr	Asp	Glu	Ala
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Ala	Leu	Lys	Asp	Ile	Val	Asp	Ala	Leu	Gly	Asp	Arg	Ile	Phe	Ser	Leu
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Glu	Gly	Thr	Asn	Lys	Asn	Glu	Thr	Ser	Phe	Gly	Leu	Glu	Met	Ser	Gln
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Thr	Gly	Phe	Ser	Ser	His	Val	Val	Glu	Asp	Gly	Val	Leu	Leu	Gly	Ala
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Val	Gly	Ala	Tyr	Asp	Trp	Asn	Gly	Ala	Val	Leu	Lys	Glu	Thr	Ser	Ala
	365					370						375			
Gly	Lys	Val	Ile	Pro	Leu	Arg	Glu	Ser	Tyr	Leu	Lys	Glu	Phe	Pro	Glu
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Glu	Leu	Lys	Asn	His	Gly	Ala	Tyr	Leu	Gly	Tyr	Thr	Val	Thr	Ser	Val
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Val	Ser	Ser	Arg	Gln	Gly	Arg	Val	Tyr	Val	Ala	Gly	Ala	Pro	Arg	Phe
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Asn	His	Thr	Gly	Lys	Val	Ile	Leu	Phe	Thr	Met	His	Asn	Asn	Arg	Ser

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Gly	Ser	Glu	Ile	Thr	Ser	Val	Asp	Ile	Asp	Gly	Asp	Gly	Val	Thr	Asp	
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Val	Leu	Leu	Val	Gly	Ala	Pro	Met	Tyr	Phe	Asn	Glu	Gly	Arg	Glu	Arg	
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Gly	Lys	Val	Tyr	Val	Tyr	Glu	Leu	Arg	Gln	Asn	Arg	Phe	Val	Tyr	Asn	
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		525					530					535				
Val	Val	Gly	Ala	Pro	Leu	Glu	Asp	Asn	His	Ala	Gly	Ala	Ile	Tyr	Ile	
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Phe	His	Gly	Phe	Arg	Gly	Ser	Ile	Leu	Lys	Thr	Pro	Lys	Gln	Arg	Ile	
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Thr	Ala	Ser	Glu	Leu	Ala	Thr	Gly	Leu	Gln	Tyr	Phe	Gly	Cys	Ser	Ile	
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His	Gly	Gln	Leu	Asp	Leu	Asn	Glu	Asp	Gly	Leu	Ile	Asp	Leu	Ala	Val	
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Ile	Asn	Ala	Ser	Leu	His	Phe	Glu	Pro	Ser	Lys	Ile	Asn	Ile	Phe	His	
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Arg	Asp	Cys	Lys	Arg	Ser	Gly	Arg	Asp	Ala	Thr	Cys	Leu	Ala	Ala	Phe	
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Leu	Cys	Phe	Thr	Pro	Ile	Phe	Leu	Ala	Pro	His	Phe	Gln	Thr	Thr	Thr	
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Val	Gly	Ile	Arg	Tyr	Asn	Ala	Thr	Met	Asp	Glu	Arg	Arg	Tyr	Thr	Pro	
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Leu	Leu	Ser	Ser	Gly	Gln	Glu	Leu	Cys	Glu	Arg	Ile	Asn	Phe	His	Val	
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Leu	Asp	Thr	Ala	Asp	Tyr	Val	Lys	Pro	Val	Thr	Phe	Ser	Val	Glu	Tyr	
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Ser	Leu	Glu	Asp	Pro	Asp	His	Gly	Pro	Met	Leu	Asp	Asp	Gly	Trp	Pro	
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Glu	His	Cys	Val	Pro	Asp	Leu	Val	Leu	Asp	Ala	Arg	Ser	Asp	Leu	Pro	
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Thr	Ala	Met	Glu	Tyr	Cys	Gln	Arg	Val	Leu	Arg	Lys	Pro	Ala	Gln	Asp	
		780				7										

Ala Pro Leu Arg Phe His Leu Lys Tyr Glu Ala Asp Val Leu Phe Thr
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 Arg Ser Ser Ser Leu Ser His Tyr Glu Val Lys Pro Asn Ser Ser Leu
 940 945 950
 Glu Arg Tyr Asp Gly Ile Gly Pro Pro Phe Ser Cys Ile Phe Arg Ile
 955 960 965 970
 Gln Asn Leu Gly Leu Phe Pro Ile His Gly Met Met Met Lys Ile Thr
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 Ile Pro Ile Ala Thr Arg Ser Gly Asn Arg Leu Leu Lys Leu Arg Asp
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 Phe Leu Thr Asp Glu Ala Asn Thr Ser Cys Asn Ile Trp Gly Asn Ser
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 Thr Glu Tyr Arg Pro Thr Pro Val Glu Glu Asp Leu Arg Arg Ala Pro
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 Gln Leu Asn His Ser Asn Ser Asp Val Val Ser Ile Asn Cys Asn Ile
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 Arg Leu Val Pro Asn Gln Glu Ile Asn Phe His Leu Leu Gly Asn Leu
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 Trp Leu Arg Ser Leu Lys Ala Leu Lys Tyr Lys Ser Met Lys Ile Met
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 Val Asn Ala Ala Leu Gln Arg Gln Phe His Ser Pro Phe Ile Phe Arg
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 Asp Trp Gln Val Pro Ile Trp Ile Ile Val Gly Ser Thr Leu Gly Gly
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 Leu Leu Leu Leu Ala Leu Leu Val Leu Ala Leu Trp Lys Leu Gly Phe
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 Gly Asp Val Tyr Lys Cys Pro Val Ile His Gly Asn Cys Thr Lys Leu
 50 55 60
 Asn Leu Gly Arg Val Thr Leu Ser Asn Val Ser Glu Arg Lys Asp Asn
 65 70 75 80
 Met Arg Leu Gly Leu Ser Leu Ala Thr Asn Pro Lys Asp Asn Ser Phe
 85 90 95
 Leu Ala Cys Ser Pro Leu Trp Ser His Glu Cys Gly Ser Ser Tyr Tyr
 100 105 110
 Thr Thr Gly Met Cys Ser Arg Val Asn Ser Asn Phe Arg Phe Ser Lys
 115 120 125
 Thr Val Ala Pro Ala Leu Gln Arg Cys Gln Thr Tyr Met Asp Ile Val
 130 135 140
 Ile Val Leu Asp Gly Ser Asn Ser Ile Tyr Pro Trp Val Glu Val Gln
 145 150 155 160
 His Phe Leu Ile Asn Ile Leu Lys Lys Phe Tyr Ile Gly Pro Gly Gln
 165 170 175

Ile	Gln	Val	Gly	Val	Val	Gln	Tyr	Gly	Glu	Asp	Val	Val	His	Glu	Phe		
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His	Leu	Asn	Asp	Tyr	Arg	Ser	Val	Lys	Asp	Val	Val	Glu	Ala	Ala	Ser		
		195					200					205					
His	Ile	Glu	Gln	Arg	Gly	Gly	Thr	Glu	Thr	Arg	Thr	Ala	Phe	Gly	Ile		
	210					215					220						
Glu	Phe	Ala	Arg	Ser	Glu	Ala	Phe	Gln	Lys	Gly	Gly	Arg	Lys	Gly	Ala		
225					230					235					240		
Lys	Lys	Val	Met	Ile	Val	Ile	Thr	Asp	Gly	Glu	Ser	His	Asp	Ser	Pro		
			245					250						255			
Asp	Leu	Glu	Lys	Val	Ile	Gln	Gln	Ser	Glu	Arg	Asp	Asn	Val	Thr	Arg		
			260					265					270				
Tyr	Ala	Val	Ala	Val	Leu	Gly	Tyr	Tyr	Asn	Arg	Arg	Gly	Ile	Asn	Pro		
	275					280						285					
Glu	Thr	Phe	Leu	Asn	Glu	Ile	Lys	Tyr	Ile	Ala	Ser	Asp	Pro	Asp	Asp		
	290				295						300						
Lys	His	Phe	Phe	Asn	Val	Thr	Asp	Glu	Ala	Ala	Leu	Lys	Asp	Ile	Val		
305					310					315					320		
Asp	Ala	Leu	Gly	Asp	Arg	Ile	Phe	Ser	Leu	Glu	Gly	Thr	Asn	Lys	Asn		
			325					330						335			
Glu	Thr	Ser	Phe	Gly	Leu	Glu	Met	Ser	Gln	Thr	Gly	Phe	Ser	Ser	His		
		340					345					350					
Val	Val	Glu	Asp	Gly	Val	Leu	Leu	Gly	Ala	Val	Gly	Ala	Tyr	Asp	Trp		
	355					360					365						
Asn	Gly	Ala	Val	Leu	Lys	Glu	Thr	Ser	Ala	Gly	Lys	Val	Ile	Pro	Leu		
	370				375					380							
Arg	Glu	Ser	Tyr	Leu	Lys	Glu	Phe	Pro	Glu	Glu	Leu	Lys	Asn	His	Gly		
385					390					395					400		
Ala	Tyr	Leu	Gly	Tyr	Thr	Val	Thr	Ser	Val	Val	Ser	Ser	Arg	Gln	Gly		
			405					410						415			
Arg	Val	Tyr	Val	Ala	Gly	Ala	Pro	Arg	Phe	Asn	His	Thr	Gly	Lys	Val		
		420						425					430				
Ile	Leu	Phe	Thr	Met	His	Asn	Asn	Arg	Ser	Leu	Thr	Ile	His	Gln	Ala		
	435					440						445					
Met	Arg	Gly	Gln	Gln	Ile	Gly	Ser	Tyr	Phe	Gly	Ser	Glu	Ile	Thr	Ser		
	450				455					460							
Val	Asp	Ile	Asp	Gly	Asp	Gly	Val	Thr	Asp	Val	Leu	Leu	Val	Gly	Ala		
465				470					475					480			
Pro	Met	Tyr	Phe	Asn	Glu	Gly	Arg	Glu	Arg	Gly	Lys	Val	Tyr	Val	Tyr		
			485					490						495			
Glu	Leu	Arg	Gln	Asn	Arg	Phe	Val	Tyr	Asn	Gly	Thr	Leu	Lys	Asp	Ser		
		500						505				510					
His	Ser	Tyr	Gln	Asn	Ala	Arg	Phe	Gly	Ser	Ser	Ile	Ala	Ser	Val	Arg		
	515					520						525					
Asp	Leu	Asn	Gln	Asp	Ser	Tyr	Asn	Asp	Val	Val	Val	Gly	Ala	Pro	Leu		
	530				535						540						
Glu	Asp	Asn	His	Ala	Gly	Ala	Ile	Tyr	Ile	Phe	His	Gly	Phe	Arg	Gly		
545				550						555				560			
Ser	Ile	Leu	Lys	Thr	Pro	Lys	Gln	Arg	Ile	Thr	Ala	Ser	Glu	Leu	Ala		
			565					570						575			
Thr	Gly	Leu	Gln	Tyr	Phe	Gly	Cys	Ser	Ile	His	Gly	Gln	Leu	Asp	Leu		
		580					585						590				
Asn	Glu	Asp	Gly	Leu	Ile	Asp	Leu	Ala	Val	Gly	Ala	Leu	Gly	Asn	Ala		
	595					600						605					
Val	Ile	Leu	Trp	Ser	Arg	Pro	Val	Val	Gln	Ile	Asn	Ala	Ser	Leu	His		
	610					615					620						
Phe	Glu	Pro	Ser	Lys	Ile	Asn	Ile	Phe	His	Arg	Asp	Cys	Lys	Arg	Ser		
625				630						635					640		
Gly	Arg	Asp	Ala	Thr	Cys	Leu	Ala	Ala	Phe	Leu	Cys	Phe	Thr	Pro	Ile		
			645					650						655			
Phe	Leu	Ala	Pro	His	Phe	Gln	Thr	Thr	Thr	Val	Gly	Ile	Arg	Tyr	Asn		

660					665					670						
Ala	Thr	Met	Asp	Glu	Arg	Arg	Tyr	Thr	Pro	Arg	Ala	His	Leu	Asp	Glu	
675					680					685						
Gly	Gly	Asp	Arg	Phe	Thr	Asn	Arg	Ala	Val	Leu	Leu	Ser	Ser	Gly	Gln	
690					695					700						
Glu	Leu	Cys	Glu	Arg	Ile	Asn	Phe	His	Val	Leu	Asp	Thr	Ala	Asp	Tyr	
705					710					715					720	
Val	Lys	Pro	Val	Thr	Phe	Ser	Val	Glu	Tyr	Ser	Leu	Glu	Asp	Pro	Asp	
725					730					735						
His	Gly	Pro	Met	Leu	Asp	Asp	Gly	Trp	Pro	Thr	Thr	Leu	Arg	Val	Ser	
740					745					750						
Val	Pro	Phe	Trp	Asn	Gly	Cys	Asn	Glu	Asp	Glu	His	Cys	Val	Pro	Asp	
755					760					765						
Leu	Val	Leu	Asp	Ala	Arg	Ser	Asp	Leu	Pro	Thr	Ala	Met	Glu	Tyr	Cys	
770					775					780						
Gln	Arg	Val	Leu	Arg	Lys	Pro	Ala	Gln	Asp	Cys	Ser	Ala	Tyr	Thr	Leu	
785					790					795					800	
Ser	Phe	Asp	Thr	Thr	Val	Phe	Ile	Ile	Glu	Ser	Thr	Arg	Gln	Arg	Val	
805					810					815						
Ala	Val	Glu	Ala	Thr	Leu	Glu	Asn	Arg	Gly	Glu	Asn	Ala	Tyr	Ser	Thr	
820					825					830						
Val	Leu	Asn	Ile	Ser	Gln	Ser	Ala	Asn	Leu	Gln	Phe	Ala	Ser	Leu	Ile	
835					840					845						
Gln	Lys	Glu	Asp	Ser	Asp	Gly	Ser	Ile	Glu	Cys	Val	Asn	Glu	Glu	Arg	
850					855					860						
Arg	Leu	Gln	Lys	Gln	Val	Cys	Asn	Val	Ser	Tyr	Pro	Phe	Phe	Arg	Ala	
865					870					875					880	
Lys	Ala	Lys	Val	Ala	Phe	Arg	Leu	Asp	Phe	Glu	Phe	Ser	Lys	Ser	Ile	
885					890					895						
Phe	Leu	His	His	Leu	Glu	Ile	Glu	Leu	Ala	Ala	Gly	Ser	Asp	Ser	Asn	
900					905					910						
Glu	Arg	Asp	Ser	Thr	Lys	Glu	Asp	Asn	Val	Ala	Pro	Leu	Arg	Phe	His	
915					920					925						
Leu	Lys	Tyr	Glu	Ala	Asp	Val	Leu	Phe	Thr	Arg	Ser	Ser	Ser	Leu	Ser	
930					935					940						
His	Tyr	Glu	Val	Lys	Pro	Asn	Ser	Ser	Leu	Glu	Arg	Tyr	Asp	Gly	Ile	
945					950					955					960	
Gly	Pro	Pro	Phe	Ser	Cys	Ile	Phe	Arg	Ile	Gln	Asn	Leu	Gly	Leu	Phe	
965					970					975						
Pro	Ile	His	Gly	Met	Met	Met	Lys	Ile	Thr	Ile	Pro	Ile	Ala	Thr	Arg	
980					985					990						
Ser	Gly	Asn	Arg	Leu	Leu	Lys	Leu	Arg	Asp	Phe	Leu	Thr	Asp	Glu	Ala	
995					1000					1005						
Asn	Thr	Ser	Cys	Asn	Ile	Trp	Gly	Asn	Ser	Thr	Glu	Tyr	Arg	Pro	Thr	
1010					1015					1020						
Pro	Val	Glu	Glu	Asp	Leu	Arg	Arg	Ala	Pro	Gln	Leu	Asn	His	Ser	Asn	
1025					1030					1035					1040	
Ser	Asp	Val	Val	Ser	Ile	Asn	Cys	Asn	Ile	Arg	Leu	Val	Pro	Asn	Gln	
1045					1050					1055						
Glu	Ile	Asn	Phe	His	Leu	Leu	Gly	Asn	Leu	Trp	Leu	Arg	Ser	Leu	Lys	
1060					1065					1070						
Ala	Leu	Lys	Tyr	Lys	Ser	Met	Lys	Ile	Met	Val	Asn	Ala	Ala	Leu	Gln	
1075					1080					1085						
Arg	Gln	Phe	His	Ser	Pro	Phe	Ile	Phe	Arg	Glu	Glu	Asp	Pro	Ser	Arg	
1090					1095					1100						
Gln	Ile	Val	Phe	Glu	Ile	Ser	Lys	Gln	Glu	Asp	Trp	Gln	Val	Pro	Ile	
1105					1110					1115					1120	
Trp	Ile	Ile	Val	Gly	Ser	Thr	Leu	Gly	Gly	Leu	Leu	Leu	Leu	Ala	Leu	
1125					1130					1135						
Leu	Val	Leu	Ala	Leu	Trp	Lys	Leu	Gly	Phe	Phe	Arg	Ser	Ala	Arg	Arg	
1140					1145					1150						

Arg Arg Glu Pro Gly Leu Asp Pro Thr Pro Lys Val Leu Glu
 1155 1160 1165

<210> 5
 <211> 22
 <212> PRT
 <213> Homo sapiens

<220>
 <221> SIGNAL
 <222> (1)...(22)

<400> 5
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 -20 -15 -10
 Pro Gly Phe Thr Asp Thr
 -5

<210> 6
 <211> 1141
 <212> PRT
 <213> Homo sapiens

<220>
 <221> SIGNAL
 <222> (1)...(22)

<400> 6
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 -20 -15 -10
 Pro Gly Phe Thr Asp Thr Phe Asn Met Asp Thr Arg Lys Pro Arg Val
 -5 1 5 10
 Ile Pro Gly Ser Arg Thr Ala Phe Phe Gly Tyr Thr Val Gln Gln His
 15 20 25
 Asp Ile Ser Gly Asn Lys Trp Leu Val Val Gly Ala Pro Leu Glu Thr
 30 35 40
 Asn Gly Tyr Gln Lys Thr Gly Asp Val Tyr Lys Cys Pro Val Ile His
 45 50 55
 Gly Asn Cys Thr Lys Leu Asn Leu Gly Arg Val Thr Leu Ser Asn Val
 60 65 70
 Ser Glu Arg Lys Asp Asn Met Arg Leu Gly Leu Ser Leu Ala Thr Asn
 75 80 85 90
 Pro Lys Asp Asn Ser Phe Leu Ala Cys Ser Pro Leu Trp Ser His Glu
 95 100 105
 Cys Gly Ser Ser Tyr Tyr Thr Thr Gly Met Cys Ser Arg Val Asn Ser
 110 115 120
 Asn Phe Arg Phe Ser Lys Thr Val Ala Pro Ala Leu Gln Arg Cys Gln
 125 130 135
 Thr Tyr Met Asp Ile Val Ile Val Leu Asp Gly Ser Asn Ser Ile Tyr
 140 145 150
 Pro Trp Val Glu Val Gln His Phe Leu Ile Asn Ile Leu Lys Lys Phe
 155 160 165 170
 Tyr Ile Gly Pro Gly Gln Ile Gln Val Gly Val Val Gln Tyr Gly Glu
 175 180 185
 Asp Val Val His Glu Phe His Leu Asn Asp Tyr Arg Ser Val Lys Asp
 190 195 200
 Val Val Glu Ala Ala Ser His Ile Glu Gln Arg Gly Gly Thr Glu Thr
 205 210 215
 Arg Thr Ala Phe Gly Ile Glu Phe Ala Arg Ser Glu Ala Phe Gln Lys
 220 225 230
 Gly Gly Arg Lys Gly Ala Lys Lys Val Met Ile Val Ile Thr Asp Gly

235		240		245		250
Glu Ser His Asp	Ser Pro Asp Leu Glu Lys Val Ile Gln Gln Ser Glu					
	255		260		265	
Arg Asp Asn Val Thr Arg Tyr Ala Val Ala Val Leu Gly Tyr Tyr Asn						
	270		275		280	
Arg Arg Gly Ile Asn Pro Glu Thr Phe Leu Asn Glu Ile Lys Tyr Ile						
	285		290		295	
Ala Ser Asp Pro Asp Asp Lys His Phe Phe Asn Val Thr Asp Glu Ala						
	300		305		310	
Ala Leu Lys Asp Ile Val Asp Ala Leu Gly Asp Arg Ile Phe Ser Leu						
	315		320		325	
Glu Gly Thr Asn Lys Asn Glu Thr Ser Phe Gly Leu Glu Met Ser Gln						
	335		340		345	
Thr Gly Phe Ser Ser His Val Val Glu Asp Gly Val Leu Leu Gly Ala						
	350		355		360	
Val Gly Ala Tyr Asp Trp Asn Gly Ala Val Leu Lys Glu Thr Ser Ala						
	365		370		375	
Gly Lys Val Ile Pro Leu Arg Glu Ser Tyr Leu Lys Glu Phe Pro Glu						
	380		385		390	
Glu Leu Lys Asn His Gly Ala Tyr Leu Gly Tyr Thr Val Thr Ser Val						
	395		400		405	
Val Ser Ser Arg Gln Gly Arg Val Tyr Val Ala Gly Ala Pro Arg Phe						
	415		420		425	
Asn His Thr Gly Lys Val Ile Leu Phe Thr Met His Asn Asn Arg Ser						
	430		435		440	
Leu Thr Ile His Gln Ala Met Arg Gly Gln Gln Ile Gly Ser Tyr Phe						
	445		450		455	
Gly Ser Glu Ile Thr Ser Val Asp Ile Asp Gly Asp Gly Val Thr Asp						
	460		465		470	
Val Leu Leu Val Gly Ala Pro Met Tyr Phe Asn Glu Gly Arg Glu Arg						
	475		480		485	
Gly Lys Val Tyr Val Tyr Glu Leu Arg Gln Asn Arg Phe Val Tyr Asn						
	495		500		505	
Gly Thr Leu Lys Asp Ser His Ser Tyr Gln Asn Ala Arg Phe Gly Ser						
	510		515		520	
Ser Ile Ala Ser Val Arg Asp Leu Asn Gln Asp Ser Tyr Asn Asp Val						
	525		530		535	
Val Val Gly Ala Pro Leu Glu Asp Asn His Ala Gly Ala Ile Tyr Ile						
	540		545		550	
Phe His Gly Phe Arg Gly Ser Ile Leu Lys Thr Pro Lys Gln Arg Ile						
	555		560		565	
Thr Ala Ser Glu Leu Ala Thr Gly Leu Gln Tyr Phe Gly Cys Ser Ile						
	575		580		585	
His Gly Gln Leu Asp Leu Asn Glu Asp Gly Leu Ile Asp Leu Ala Val						
	590		595		600	
Gly Ala Leu Gly Asn Ala Val Ile Leu Trp Ser Arg Pro Val Val Gln						
	605		610		615	
Ile Asn Ala Ser Leu His Phe Glu Pro Ser Lys Ile Asn Ile Phe His						
	620		625		630	
Arg Asp Cys Lys Arg Ser Gly Arg Asp Ala Thr Cys Leu Ala Ala Phe						
	635		640		645	
Leu Cys Phe Thr Pro Ile Phe Leu Ala Pro His Phe Gln Thr Thr Thr						
	655		660		665	
Val Gly Ile Arg Tyr Asn Ala Thr Met Asp Glu Arg Arg Tyr Thr Pro						
	670		675		680	
Arg Ala His Leu Asp Glu Gly Gly Asp Arg Phe Thr Asn Arg Ala Val						
	685		690		695	
Leu Leu Ser Ser Gly Gln Glu Leu Cys Glu Arg Ile Asn Phe His Val						
	700		705		710	
Leu Asp Thr Ala Asp Tyr Val Lys Pro Val Thr Phe Ser Val Glu Tyr						
	715		720		725	
					730	

Ser Leu Glu Asp Pro Asp His Gly Pro Met Leu Asp Asp Gly Trp Pro
 735 740 745
 Thr Thr Leu Arg Val Ser Val Pro Phe Trp Asn Gly Cys Asn Glu Asp
 750 755 760
 Glu His Cys Val Pro Asp Leu Val Leu Asp Ala Arg Ser Asp Leu Pro
 765 770 775
 Thr Ala Met Glu Tyr Cys Gln Arg Val Leu Arg Lys Pro Ala Gln Asp
 780 785 790
 Cys Ser Ala Tyr Thr Leu Ser Phe Asp Thr Thr Val Phe Ile Ile Glu
 795 800 805 810
 Ser Thr Arg Gln Arg Val Ala Val Glu Ala Thr Leu Glu Asn Arg Gly
 815 820 825
 Glu Asn Ala Tyr Ser Thr Val Leu Asn Ile Ser Gln Ser Ala Asn Leu
 830 835 840
 Gln Phe Ala Ser Leu Ile Gln Lys Glu Asp Ser Asp Gly Ser Ile Glu
 845 850 855
 Cys Val Asn Glu Glu Arg Arg Leu Gln Lys Gln Val Cys Asn Val Ser
 860 865 870
 Tyr Pro Phe Phe Arg Ala Lys Ala Lys Val Ala Phe Arg Leu Asp Phe
 875 880 885 890
 Glu Phe Ser Lys Ser Ile Phe Leu His His Leu Glu Ile Glu Leu Ala
 895 900 905
 Ala Gly Ser Asp Ser Asn Glu Arg Asp Ser Thr Lys Glu Asp Asn Val
 910 915 920
 Ala Pro Leu Arg Phe His Leu Lys Tyr Glu Ala Asp Val Leu Phe Thr
 925 930 935
 Arg Ser Ser Ser Leu Ser His Tyr Glu Val Lys Pro Asn Ser Ser Leu
 940 945 950
 Glu Arg Tyr Asp Gly Ile Gly Pro Pro Phe Ser Cys Ile Phe Arg Ile
 955 960 965 970
 Gln Asn Leu Gly Leu Phe Pro Ile His Gly Met Met Met Lys Ile Thr
 975 980 985
 Ile Pro Ile Ala Thr Arg Ser Gly Asn Arg Leu Leu Lys Leu Arg Asp
 990 995 1000
 Phe Leu Thr Asp Glu Ala Asn Thr Ser Cys Asn Ile Trp Gly Asn Ser
 1005 1010 1015
 Thr Glu Tyr Arg Pro Thr Pro Val Glu Glu Asp Leu Arg Arg Ala Pro
 1020 1025 1030
 Gln Leu Asn His Ser Asn Ser Asp Val Val Ser Ile Asn Cys Asn Ile
 1035 1040 1045 1050
 Arg Leu Val Pro Asn Gln Glu Ile Asn Phe His Leu Leu Gly Asn Leu
 1055 1060 1065
 Trp Leu Arg Ser Leu Lys Ala Leu Lys Tyr Lys Ser Met Lys Ile Met
 1070 1075 1080
 Val Asn Ala Ala Leu Gln Arg Gln Phe His Ser Pro Phe Ile Phe Arg
 1085 1090 1095
 Glu Glu Asp Pro Ser Arg Gln Ile Val Phe Glu Ile Ser Lys Gln Glu
 1100 1105 1110
 Asp Trp Gln Val Pro
 1115

<210> 7
 <211> 182
 <212> PRT
 <213> Homo sapiens

<400> 7
 Asp Ile Val Ile Val Leu Asp Gly Ser Asn Ser Ile Tyr Pro Trp Val
 1 5 10 15
 Glu Val Gln His Phe Leu Ile Asn Ile Leu Lys Lys Phe Tyr Ile Gly
 20 25 30

Pro Gly Gln Ile Gln Val Gly Val Val Gln Tyr Gly Glu Asp Val Val
 35 40 45
 His Glu Phe His Leu Asn Asp Tyr Arg Ser Val Lys Asp Val Val Glu
 50 55 60
 Ala Ala Ser His Ile Glu Gln Arg Gly Gly Thr Glu Thr Arg Thr Ala
 65 70 75 80
 Phe Gly Ile Glu Phe Ala Arg Ser Glu Ala Phe Gln Lys Gly Gly Arg
 85 90 95
 Lys Gly Ala Lys Lys Val Met Ile Val Ile Thr Asp Gly Glu Ser His
 100 105 110
 Asp Ser Pro Asp Leu Glu Lys Val Ile Gln Gln Ser Glu Arg Asp Asn
 115 120 125
 Val Thr Arg Tyr Ala Val Ala Val Leu Gly Tyr Tyr Asn Arg Arg Gly
 130 135 140
 Ile Asn Pro Glu Thr Phe Leu Asn Glu Ile Lys Tyr Ile Ala Ser Asp
 145 150 155 160
 Pro Asp Asp Lys His Phe Phe Asn Val Thr Asp Glu Ala Ala Leu Lys
 165 170 175
 Asp Ile Val Asp Ala Leu
 180

<210> 8
 <211> 36
 <212> PRT
 <213> Homo sapiens

<400> 8
 Ala Phe Phe Gly Tyr Thr Val Gln Gln His Asp Ile Ser Gly Asn Lys
 1 5 10 15
 Trp Leu Val Val Gly Ala Pro Leu Glu Thr Asn Gly Tyr Gln Lys Thr
 20 25 30
 Gly Asp Val Tyr
 35

<210> 9
 <211> 43
 <212> PRT
 <213> Homo sapiens

<400> 9
 Asp Asn Ser Phe Leu Ala Cys Ser Pro Leu Trp Ser His Glu Cys Gly
 1 5 10 15
 Ser Ser Tyr Tyr Thr Thr Gly Met Cys Ser Arg Val Asn Ser Asn Phe
 20 25 30
 Arg Phe Ser Lys Thr Val Ala Pro Ala Leu Gln
 35 40

<210> 10
 <211> 26
 <212> PRT
 <213> Homo sapiens

<400> 10
 Ser Gln Thr Gly Phe Ser Ser His Val Val Glu Asp Gly Val Leu Leu
 1 5 10 15
 Gly Ala Val Gly Ala Tyr Asp Trp Asn Gly
 20 25

<210> 11
 <211> 35
 <212> PRT

<213> Homo sapiens

<400> 11
His Gly Ala Tyr Leu Gly Tyr Thr Val Thr Ser Val Val Ser Ser Arg
1 5 10 15
Gln Gly Arg Val Tyr Val Ala Gly Ala Pro Arg Phe Asn His Thr Gly
20 25 30
Lys Val Ile
35

<210> 12
<211> 39
<212> PRT
<213> Homo sapiens

<400> 12
Ser Tyr Phe Gly Ser Glu Ile Thr Ser Val Asp Ile Asp Gly Asp Gly
1 5 10 15
Val Thr Asp Val Leu Leu Val Gly Ala Pro Met Tyr Phe Asn Glu Gly
20 25 30
Arg Glu Arg Gly Lys Val Tyr
35

<210> 13
<211> 36
<212> PRT
<213> Homo sapiens

<400> 13
Ala Arg Phe Gly Ser Ser Ile Ala Ser Val Arg Asp Leu Asn Gln Asp
1 5 10 15
Ser Tyr Asn Asp Val Val Val Gly Ala Pro Leu Glu Asp Asn His Ala
20 25 30
Gly Ala Ile Tyr
35

<210> 14
<211> 39
<212> PRT
<213> Homo sapiens

<400> 14
Gln Tyr Phe Gly Cys Ser Ile His Gly Gln Leu Asp Leu Asn Glu Asp
1 5 10 15
Gly Leu Ile Asp Leu Ala Val Gly Ala Leu Gly Asn Ala Val Ile Leu
20 25 30
Trp Ser Arg Pro Val Val Gln
35

<210> 15
<211> 23
<212> PRT
<213> Homo sapiens

<400> 15
Ile Trp Ile Ile Val Gly Ser Thr Leu Gly Gly Leu Leu Leu Leu Ala
1 5 10 15
Leu Leu Val Leu Ala Leu Trp
20

<210> 16

<211> 24
 <212> PRT
 <213> Homo sapiens

<400> 16
 Lys Leu Gly Phe Phe Arg Ser Ala Arg Arg Arg Arg Glu Pro Gly Leu
 1 5 10 15
 Asp Pro Thr Pro Lys Val Leu Glu
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<210> 17
 <211> 3884
 <212> DNA
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<220>
 <221> CDS
 <222> (22)...(3522)

<400> 17
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 Met Glu Leu Pro Phe Val Thr His Leu Phe
 1 5 10
 ttg ccc ctg gtg ttc ctg aca ggt ctc tgc tcc ccc ttt aac ctg gat 99
 Leu Pro Leu Val Phe Leu Thr Gly Leu Cys Ser Pro Phe Asn Leu Asp
 15 20 25
 gaa cat cac cca cgc cta ttc cca ggg cca cca gaa gct gaa ttt gga 147
 Glu His His Pro Arg Leu Phe Pro Gly Pro Pro Glu Ala Glu Phe Gly
 30 35 40
 tac agt gtc tta caa cat gtt ggg ggt gga cag cga tgg atg ctg gtg 195
 Tyr Ser Val Leu Gln His Val Gly Gly Gly Gln Arg Trp Met Leu Val
 45 50 55
 ggc gcc ccc tgg gat ggg cct tca ggc gac cgg agg ggg gac gtt tat 243
 Gly Ala Pro Trp Asp Gly Pro Ser Gly Asp Arg Arg Gly Asp Val Tyr
 60 65 70
 cgc tgc cct gta ggg ggg gcc cac aat gcc cca tgt gcc aag ggc cac 291
 Arg Cys Pro Val Gly Gly Ala His Asn Ala Pro Cys Ala Lys Gly His
 75 80 85 90
 tta ggt gac tac caa ctg gga aat tca tct cat cct gct gtg aat atg 339
 Leu Gly Asp Tyr Gln Leu Gly Asn Ser Ser His Pro Ala Val Asn Met
 95 100 105
 cac ctg ggg atg tct ctg tta gag aca gat ggt gat ggg gga ttc atg 387
 His Leu Gly Met Ser Leu Leu Glu Thr Asp Gly Asp Gly Gly Phe Met
 110 115 120
 gcc tgt gcc cct ctc tgg tct cgt gct tgt ggc agc tct gtc ttc agt 435
 Ala Cys Ala Pro Leu Trp Ser Arg Ala Cys Gly Ser Ser Val Phe Ser
 125 130 135
 tct ggg ata tgt gcc cgt gtg gat gct tca ttc cag cct cag gga agc 483
 Ser Gly Ile Cys Ala Arg Val Asp Ala Ser Phe Gln Pro Gln Gly Ser
 140 145 150
 ctg gca ccc act gcc caa cgc tgc cca aca tac atg gat gtt gtc att 531

Leu 155	Ala	Pro	Thr	Ala	Gln 160	Arg	Cys	Pro	Thr	Tyr 165	Met	Asp	Val	Val	Ile 170	
gtc	ttg	gat	ggc	tcc	aac	agc	atc	tac	ccc	tgg	tct	gaa	gtt	cag	acc	579
Val	Leu	Asp	Gly	Ser	Asn 175	Ser	Ile	Tyr	Pro 180	Trp	Ser	Glu	Val	Gln 185	Thr	
ttc	cta	cga	aga	ctg	gta	ggg	aaa	ctg	ttt	att	gac	cca	gaa	cag	ata	627
Phe	Leu	Arg	Arg	Leu	Val	Gly	Lys	Leu	Phe	Ile	Asp	Pro	Glu	Gln 200	Ile	
cag	gtg	gga	ctg	gta	cag	tat	ggg	gag	agc	cct	gta	cat	gag	tgg	tcc	675
Gln	Val	Gly	Leu	Val	Gln	Tyr	Gly	Glu	Ser	Pro	Val	His	Glu	Trp	Ser	
ctg	gga	gat	ttc	cga	acg	aag	gaa	gaa	gtg	gtg	aga	gca	gca	aag	aac	723
Leu	Gly	Asp	Phe	Arg	Thr	Lys	Glu	Glu	Val	Val	Arg	Ala	Ala	Lys	Asn	
ctc	agt	cgg	cgg	gag	gga	cga	gaa	aca	aag	act	gcc	caa	gca	ata	atg	771
Leu	Ser	Arg	Arg	Glu	Gly	Arg	Glu	Thr	Lys	Thr	Ala	Gln	Ala	Ile	Met	
gtg	gcc	tgc	aca	gaa	ggg	ttc	agt	cag	tcc	cat	ggg	ggc	cga	ccc	gag	819
Val	Ala	Cys	Thr	Glu	Gly	Phe	Ser	Gln	Ser	His	Gly	Gly	Arg	Pro	Glu	
gct	gcc	agg	cta	ctg	gtg	gtt	gtc	act	gat	gga	gag	tcc	cat	gat	gga	867
Ala	Ala	Arg	Leu	Leu	Val	Val	Val	Thr	Asp	Gly	Glu	Ser	His	Asp	Gly	
gag	gag	ctt	cct	gca	gca	cta	aag	gcc	tgt	gag	gct	gga	aga	gtg	aca	915
Glu	Glu	Leu	Pro	Ala	Ala	Leu	Lys	Ala	Cys	Glu	Ala	Gly	Arg	Val	Thr	
cgc	tat	ggg	att	gca	gtc	ctt	ggg	cac	tac	ctc	cgg	cgg	cag	cga	gat	963
Arg	Tyr	Gly	Ile	Ala	Val	Leu	Gly	His	Tyr	Leu	Arg	Arg	Gln	Arg	Asp	
ccc	agc	tct	ttc	ctg	aga	gaa	att	aga	act	att	gcc	agt	gat	cca	gat	1011
Pro	Ser	Ser	Phe	Leu	Arg	Glu	Ile	Arg	Thr	Ile	Ala	Ser	Asp	Pro	Asp	
gag	cga	ttc	ttc	ttc	aat	gtc	aca	gat	gag	gct	gct	ctg	act	gac	att	1059
Glu	Arg	Phe	Phe	Phe	Asn	Val	Thr	Asp	Glu	Ala	Ala	Leu	Thr	Asp	Ile	
gtg	gat	gca	cta	gga	gat	cgg	att	ttt	ggc	ctt	gaa	ggg	tcc	cat	gca	1107
Val	Asp	Ala	Leu	Gly	Asp	Arg	Ile	Phe	Gly	Leu	Glu	Gly	Ser	His	Ala	
gaa	aac	gaa	agc	tcc	ttt	ggg	ctg	gaa	atg	tct	cag	att	ggg	ttc	tcc	1155
Glu	Asn	Glu	Ser	Ser	Phe	Gly	Leu	Glu	Met	Ser	Gln	Ile	Gly	Phe	Ser	
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Thr	His	Arg	Leu	Lys	Asp	Gly	Ile	Leu	Phe	Gly	Met	Val	Gly	Ala	Tyr	
gac	tgg	gga	ggc	tct	gtg	cta	tgg	ctt	gaa	gga	ggc	cac	cgc	ctt	ttc	1251
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Pro Pro Arg Met Ala Leu Glu Asp Glu Phe Pro Pro Ala Leu Gln Asn	415	420	425	
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His Ala Ala Tyr Leu Gly Tyr Ser Val Ser Ser Met Leu Leu Arg Gly	430	435	440	
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Gly Arg Arg Leu Phe Leu Ser Gly Ala Pro Arg Phe Arg His Arg Gly	445	450	455	
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Lys Val Ile Ala Phe Gln Leu Lys Lys Asp Gly Ala Val Arg Val Ala	460	465	470	
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Gln Ser Leu Gln Gly Glu Gln Ile Gly Ser Tyr Phe Gly Ser Glu Leu	475	480	485	490
tgc cca ttg gat aca gat agg gat gga aca act gat gtc tta ctt gtg				1539
Cys Pro Leu Asp Thr Asp Arg Asp Gly Thr Thr Asp Val Leu Leu Val	495	500	505	
gct gcc ccc atg ttc ctg gga ccc cag aac aag gaa aca gga cgt gtt				1587
Ala Ala Pro Met Phe Leu Gly Pro Gln Asn Lys Glu Thr Gly Arg Val	510	515	520	
tat gtg tat ctg gta ggc cag cag tcc ttg ctg acc ctc caa gga aca				1635
Tyr Val Tyr Leu Val Gly Gln Gln Ser Leu Leu Thr Leu Gln Gly Thr	525	530	535	
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Leu Gln Pro Glu Pro Pro Gln Asp Ala Arg Phe Gly Phe Ala Met Gly	540	545	550	
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Ala Leu Pro Asp Leu Asn Gln Asp Gly Phe Ala Asp Val Ala Val Gly	555	560	565	570
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Ala Pro Leu Glu Asp Gly His Gln Gly Ala Leu Tyr Leu Tyr His Gly	575	580	585	
acc cag agt gga gtc agg ccc cat cct gcc cag agg att gct gct gcc				1827
Thr Gln Ser Gly Val Arg Pro His Pro Ala Gln Arg Ile Ala Ala Ala	590	595	600	
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Ser Met Pro His Ala Leu Ser Tyr Phe Gly Arg Ser Val Asp Gly Arg	605	610	615	
cta gat ctg gat gga gat gat ctg gtc gat gtg gct gtg ggt gcc cag				1923
Leu Asp Leu Asp Gly Asp Asp Leu Val Asp Val Ala Val Gly Ala Gln	620	625	630	
ggg gca gcc atc ctg ctc agc tcc cgg ccc att gtc cat ctg acc cca				1971
Gly Ala Ala Ile Leu Leu Ser Ser Arg Pro Ile Val His Leu Thr Pro	635	640	645	650

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Ser Asp Tyr Leu Arg Pro Val Ala Leu Thr Val Thr Phe Ala Leu Asp	
750 755 760	
aat act aca aag cca ggg cct gtg ctg aat gag ggc tca ccc acc tct	2355
Asn Thr Thr Lys Pro Gly Pro Val Leu Asn Glu Gly Ser Pro Thr Ser	
765 770 775	
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Ile Gln Lys Leu Val Pro Phe Ser Lys Asp Cys Gly Pro Asp Asn Glu	
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Cys Val Thr Asp Leu Val Leu Gln Val Asn Met Asp Ile Arg Gly Ser	
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agt atc atc ttc tct aga aac ctc cac ctg gcc agt ctc act cct cag	2595
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 Tyr Gly Glu Ser Pro Val His Glu Trp Ser Leu Gly Asp Phe Arg Thr
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 Lys Glu Glu Val Val Arg Ala Ala Lys Asn Leu Ser Arg Arg Glu Gly
 225 230 235 240
 Arg Glu Thr Lys Thr Ala Gln Ala Ile Met Val Ala Cys Thr Glu Gly
 245 250 255
 Phe Ser Gln Ser His Gly Gly Arg Pro Glu Ala Ala Arg Leu Leu Val
 260 265 270
 Val Val Thr Asp Gly Glu Ser His Asp Gly Glu Glu Leu Pro Ala Ala
 275 280 285
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Val Thr Asp Glu	Ala Ala Leu Thr Asp	Ile Val Asp Ala Leu Gly Asp
	340	345
Arg Ile Phe Gly	Leu Glu Gly Ser His Ala	Glu Asn Glu Ser Ser Phe
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Gly Leu Glu Met	Ser Gln Ile Gly Phe Ser	Thr His Arg Leu Lys Asp
	370	375
Gly Ile Leu Phe	Gly Met Val Gly Ala Tyr	Asp Trp Gly Gly Ser Val
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Leu Trp Leu Glu	Gly Gly His Arg Leu Phe	Pro Pro Arg Met Ala Leu
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Glu Asp Glu Phe	Pro Pro Ala Leu Gln	Asn His Ala Ala Tyr Leu Gly
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Tyr Ser Val Ser	Ser Met Leu Leu Arg	Gly Gly Arg Arg Leu Phe Leu
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Ser Gly Ala Pro	Arg Phe Arg His Arg	Gly Lys Val Ile Ala Phe Gln
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Leu Lys Lys Asp	Gly Ala Val Arg Val	Ala Gln Ser Leu Gln Gly Glu
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Pro His Pro Ala	Gln Arg Ile Ala Ala	Ala Ser Met Pro His Ala Leu
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Ser Ser Arg Pro	Ile Val His Leu Thr	Pro Ser Leu Glu Val Thr Pro
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Ala Val Cys Leu	Thr Ala Ala Leu Cys	Phe Gln Val Thr Ser Arg Thr
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Pro Gly Arg Trp	Asp His Gln Phe Tyr	Met Arg Phe Thr Ala Ser Leu
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Asp Glu Trp Thr	Ala Gly Ala Arg Ala	Ala Phe Asp Gly Ser Gly Gln
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Glu Gln Leu His	Phe His Val Leu Asp	Thr Ser Asp Tyr Leu Arg Pro
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Val Ala Leu Thr	Val Thr Phe Ala Leu	Asp Asn Thr Thr Lys Pro Gly
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Pro Val Leu Asn	Glu Gly Ser Pro Thr	Ser Ile Gln Lys Leu Val Pro
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Leu Gln Val Asn Met Asp Ile Arg Gly Ser Arg Lys Ala Pro Phe Val
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54

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act acg ctc aga gtg tcg gtg ccc ttc tgg aat ggc tgt aat gag gat Thr Thr Leu Arg Val Ser Val Pro Phe Trp Asn Gly Cys Asn Glu Asp 770 775 780				2352
gaa cac tgt gtc cct gac ctt gta ctg gat gct cgg agt gac ctg ccc Glu His Cys Val Pro Asp Leu Val Leu Asp Ala Arg Ser Asp Leu Pro 785 790 795 800				2400
act gcc atg gag tac tgc cag cgg gtg ctg ggg agg ccg gcg cag gac Thr Ala Met Glu Tyr Cys Gln Arg Val Leu Gly Arg Pro Ala Gln Asp 805 810 815				2448
tgc tcc agc tac acc ctg tcc ttc gac acc act gtc ttc atc ata gag Cys Ser Ser Tyr Thr Leu Ser Phe Asp Thr Thr Val Phe Ile Ile Glu 820 825 830				2496
agc acg cgc cgc cgg gtg gca gtg gag gcc acg ctg gag aac aga gga Ser Thr Arg Arg Arg Val Ala Val Glu Ala Thr Leu Glu Asn Arg Gly 835 840 845				2544
gag aat gct tac agc gcc gtc ctc aac atc tcc cag tca gag aac ctt Glu Asn Ala Tyr Ser Ala Val Leu Asn Ile Ser Gln Ser Glu Asn Leu 850 855 860				2592
cag ttt gcc agc ctg atc cag aag gat gac tca gac aac agc atc gag Gln Phe Ala Ser Leu Ile Gln Lys Asp Asp Ser Asp Asn Ser Ile Glu 865 870 875 880				2640

tgt gtg aac gag gag agg cgg ctt cac aag aaa gtc tgc aac gtc agc Cys Val Asn Glu Glu Arg Arg Leu His Lys Lys Val Cys Asn Val Ser 885 890 895	2688
tac ccc ttc ttc aga gcc aag gcc aag gtg gct ttc cgt ctg gat ttc Tyr Pro Phe Phe Arg Ala Lys Ala Lys Val Ala Phe Arg Leu Asp Phe 900 905 910	2736
gag ttc agc aag tct gtg ttt ctg cac cat ctt cag atc cat ctg ggt Glu Phe Ser Lys Ser Val Phe Leu His His Leu Gln Ile His Leu Gly 915 920 925	2784
gcc ggc agt gac agt cac gag caa gac agc acc gca gac gat aac acg Ala Gly Ser Asp Ser His Glu Gln Asp Ser Thr Ala Asp Asp Asn Thr 930 935 940	2832
gcc ctc ctg cgc ttc cac ctc aaa tat gaa gca gac gtc ctc ttt acc Ala Leu Leu Arg Phe His Leu Lys Tyr Glu Ala Asp Val Leu Phe Thr 945 950 955 960	2880
aga agc agc agc ctg agc cac ttc gag gtc aag gca aac agc tca ctt Arg Ser Ser Ser Leu Ser His Phe Glu Val Lys Ala Asn Ser Ser Leu 965 970 975	2928
gag agc tat gat ggc atc gga cct ccg ttc aac tgt gtt ttc aag gtg Glu Ser Tyr Asp Gly Ile Gly Pro Pro Phe Asn Cys Val Phe Lys Val 980 985 990	2976
cag aac ctg ggc ttt ttc ccc atc cac ggg gtg atg atg aag atc act Gln Asn Leu Gly Phe Phe Pro Ile His Gly Val Met Met Lys Ile Thr 995 1000 1005	3024
gtg ccc atc gcc acc agg ggt ggc aac cgc ctg ctg atg ttg agg gac Val Pro Ile Ala Thr Arg Gly Gly Asn Arg Leu Leu Met Leu Arg Asp 1010 1015 1020	3072
ttc ttc acc gac cag ggc aac aca tcc tgt aac atc tgg ggg aac agc Phe Phe Thr Asp Gln Gly Asn Thr Ser Cys Asn Ile Trp Gly Asn Ser 1025 1030 1035 1040	3120
aca gag tac agg agt acc cca act gag gaa gat ctg agc cat gcc cca Thr Glu Tyr Arg Ser Thr Pro Thr Glu Glu Asp Leu Ser His Ala Pro 1045 1050 1055	3168
cag agg aat cac agc aac tcc gac gtg gtc tcc atc atc tgc aac ctg Gln Arg Asn His Ser Asn Ser Asp Val Val Ser Ile Ile Cys Asn Leu 1060 1065 1070	3216
agg ctg gcc ccc agc cag gag acc agc ttc tac ctg gtg gga aac ctg Arg Leu Ala Pro Ser Gln Glu Thr Ser Phe Tyr Leu Val Gly Asn Leu 1075 1080 1085	3264
tgg ctg aca tct ctg aaa gca ctc aag tac agg tct ctg aag atc aca Trp Leu Thr Ser Leu Lys Ala Leu Lys Tyr Arg Ser Leu Lys Ile Thr 1090 1095 1100	3312
gtc aac gcc gcc ttg cag agg cag ttc cac agc ccc ttc atc ttc cga Val Asn Ala Ala Leu Gln Arg Gln Phe His Ser Pro Phe Ile Phe Arg 1105 1110 1115 1120	3360

gag gaa gac cct agc cgc cag gtc aca ttt gag atc tcc aag caa gaa 3408
 Glu Glu Asp Pro Ser Arg Gln Val Thr Phe Glu Ile Ser Lys Gln Glu
 1125 1130 1135

 gac tgg cag gtc ccc atc tgg atc atc gtg ggc agc act ctg ggg ggc 3456
 Asp Trp Gln Val Pro Ile Trp Ile Ile Val Gly Ser Thr Leu Gly Gly
 1140 1145 1150

 ctc ttg ctg ctg gcc ctg ctg gtc ctg gca ctg tgg aag ctc ggt ttt 3504
 Leu Leu Leu Leu Ala Leu Leu Val Leu Ala Leu Trp Lys Leu Gly Phe
 1155 1160 1165

 ttt aaa agt gcc aag cgc aag agg gaa cct ggc cta ggc ccc atc ccc 3552
 Phe Lys Ser Ala Lys Arg Lys Arg Glu Pro Gly Leu Gly Pro Ile Pro
 1170 1175 1180

 aaa gag ctc aag 3564
 Lys Glu Leu Lys
 1185

<210> 21
 <211> 1188
 <212> PRT
 <213> Mus musculus

<220>
 <221> SIGNAL
 <222> (1)...(22)

<400> 21
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 Pro Gly Phe Thr Asp Thr Phe Asn Met Asp Thr Arg Asn Pro Arg Val
 -5 1 5 10
 Ile Ala Gly Pro Ser Ala Ala Phe Phe Gly Tyr Thr Val Gln Gln His
 15 20 25
 Asp Ile Ser Gly Lys Lys Trp Leu Val Val Gly Ala Pro Met Glu Thr
 30 35 40
 Asn Gly His Gln Lys Thr Gly Asp Val Tyr Lys Cys Pro Val Thr Gln
 45 50 55
 Gly Asn Cys Thr Lys Leu Asn Leu Gly Arg Val Thr Leu Ser Asn Val
 60 65 70
 Ser Glu Arg Lys Asp Asn Met Arg Leu Gly Leu Ser Leu Ala Thr Asn
 75 80 85 90
 Pro Lys Asp Asn Ser Phe Leu Ala Cys Ser Pro Leu Trp Ser His Glu
 95 100 105
 Cys Gly Ser Ser Tyr Tyr Thr Thr Gly Met Cys Ser Arg Val Asn Ser
 110 115 120
 Asn Phe Arg Phe Ser Lys Thr Val Ala Pro Ala Leu Gln Arg Cys Gln
 125 130 135
 Thr Tyr Met Asp Ile Val Ile Val Leu Asp Gly Ser Asn Ser Ile Tyr
 140 145 150
 Pro Trp Val Glu Val Gln His Phe Leu Ile Asn Ile Leu Lys Lys Phe
 155 160 165 170
 Tyr Ile Gly Pro Gly Gln Ile Gln Val Gly Ile Val Gln Tyr Gly Glu
 175 180 185
 Asp Ala Val His Glu Phe His Leu Asn Asp Tyr Arg Ser Val Lys Asp
 190 195 200
 Val Val Glu Ala Ala Ser His Ile Glu Gln Arg Gly Gly Thr Glu Thr
 205 210 215
 Arg Thr Ala Phe Gly Ile Glu Phe Ala Arg Ser Glu Ala Phe Gln Lys

220		225		230
Gly Gly Arg Lys Gly Ala Lys Lys Val Met Ile Val Ile Thr Asp Gly				
235		240		245
Glu Ser His Asp Ser Pro Asp Leu Glu Lys Val Ile Arg Gln Ser Glu				250
	255		260	265
Lys Asp Asn Val Thr Arg Tyr Ala Val Ala Val Leu Gly Tyr Tyr Asn				
	270		275	280
Arg Arg Gly Ile Asn Pro Glu Thr Phe Leu Asn Glu Ile Lys Tyr Ile				
	285		290	295
Ala Ser Asp Pro Asp Asp Lys His Phe Phe Asn Val Thr Asp Glu Ala				
	300		305	310
Ala Leu Lys Asp Ile Val Asp Ala Leu Gly Asp Arg Ile Phe Ser Leu				
315		320		325
Glu Gly Thr Asn Lys Asn Glu Thr Ser Phe Gly Leu Glu Met Ser Gln				
	335		340	345
Thr Gly Phe Ser Ser His Val Val Glu Asp Gly Ile Leu Leu Gly Ala				
	350		355	360
Val Gly Ala Tyr Asp Trp Asn Gly Ala Val Leu Lys Glu Thr Ser Ala				
	365		370	375
Gly Lys Val Ile Pro His Arg Glu Ser Tyr Leu Lys Glu Phe Pro Glu				
	380		385	390
Glu Leu Lys Asn His Ala Ala Tyr Leu Gly Tyr Thr Val Thr Ser Val				
395		400		405
Val Ser Ser Arg Gln Gly Arg Val Tyr Val Ala Gly Ala Pro Arg Phe				
	415		420	425
Asn His Thr Gly Lys Val Ile Leu Phe Ser Met His Asn Asn Arg Ser				
	430		435	440
Leu Thr Ile His Gln Ala Leu Arg Gly Glu Gln Ile Gly Ser Tyr Phe				
	445		450	455
Gly Ser Glu Ile Thr Ser Val Asp Val Asn Asp Asp Arg Val Thr Asp				
	460		465	470
Val Leu Leu Val Gly Ala Pro Met Tyr Phe Ser Glu Gly Arg Glu Arg				
475		480		485
Gly Lys Val Tyr Val Tyr Asn Leu Arg Gln Asn Arg Phe Val Tyr Asn				
	495		500	505
Gly Thr Leu Lys Asp Ser His Ser Tyr Gln Asn Ala Arg Phe Gly Ser				
	510		515	520
Cys Ile Ala Ser Val Gln Asp Leu Asn Gln Asp Ser Tyr Asn Asp Val				
	525		530	535
Val Val Gly Ala Pro Leu Glu Asp Ser His Arg Gly Ala Ile Tyr Ile				
	540		545	550
Phe His Gly Phe Gln Thr Asn Ile Leu Lys Lys Pro Met Gln Arg Ile				
555		560		565
Thr Ala Ser Glu Leu Ala Pro Gly Leu Gln His Phe Gly Cys Ser Ile				
	575		580	585
His Gly Gln Leu Asp Leu Asn Glu Asp Gly Leu Val Asp Leu Ala Val				
	590		595	600
Gly Ala Leu Gly Asn Ala Val Val Leu Trp Ala Arg Pro Val Val Gln				
	605		610	615
Ile Asn Ala Ser Leu His Phe Glu Pro Ser Lys Ile Asn Ile Phe His				
	620		625	630
Lys Asp Cys Lys Arg Asn Gly Arg Asp Ala Thr Cys Leu Ala Ala Phe				
635		640		645
Leu Cys Phe Ile Pro Ile Phe Leu Ala Pro His Phe Gln Thr Ala Thr				
	655		660	665
Val Gly Ile Arg Tyr Asn Ala Thr Met Asp Glu Arg Arg Tyr Met Pro				
	670		675	680
Arg Ala His Leu Asp Glu Gly Gly Asp Gln Phe Thr Asn Arg Ala Val				
	685		690	695
Leu Leu Ser Ser Gly Gln Glu His Cys Gln Arg Ile Asn Phe His Val				
700		705		710

Leu Asp Thr Ala Asp Tyr Val Lys Pro Val Ala Phe Ser Val Glu Tyr
 715 720 725 730
 Ser Leu Glu Asp Pro Asp Asn Gly Pro Met Leu Asp Asn Gly Trp Pro
 735 740 745
 Thr Thr Leu Arg Val Ser Val Pro Phe Trp Asn Gly Cys Asn Glu Asp
 750 755 760
 Glu His Cys Val Pro Asp Leu Val Leu Asp Ala Arg Ser Asp Leu Pro
 765 770 775
 Thr Ala Met Glu Tyr Cys Gln Arg Val Leu Gly Arg Pro Ala Gln Asp
 780 785 790
 Cys Ser Ser Tyr Thr Leu Ser Phe Asp Thr Thr Val Phe Ile Ile Glu
 795 800 805 810
 Ser Thr Arg Arg Arg Val Ala Val Glu Ala Thr Leu Glu Asn Arg Gly
 815 820 825
 Glu Asn Ala Tyr Ser Ala Val Leu Asn Ile Ser Gln Ser Glu Asn Leu
 830 835 840
 Gln Phe Ala Ser Leu Ile Gln Lys Asp Asp Ser Asp Asn Ser Ile Glu
 845 850 855
 Cys Val Asn Glu Glu Arg Arg Leu His Lys Lys Val Cys Asn Val Ser
 860 865 870
 Tyr Pro Phe Phe Arg Ala Lys Ala Lys Val Ala Phe Arg Leu Asp Phe
 875 880 885 890
 Glu Phe Ser Lys Ser Val Phe Leu His His Leu Gln Ile His Leu Gly
 895 900 905
 Ala Gly Ser Asp Ser His Glu Gln Asp Ser Thr Ala Asp Asp Asn Thr
 910 915 920
 Ala Leu Leu Arg Phe His Leu Lys Tyr Glu Ala Asp Val Leu Phe Thr
 925 930 935
 Arg Ser Ser Ser Leu Ser His Phe Glu Val Lys Ala Asn Ser Ser Leu
 940 945 950
 Glu Ser Tyr Asp Gly Ile Gly Pro Pro Phe Asn Cys Val Phe Lys Val
 955 960 965 970
 Gln Asn Leu Gly Phe Phe Pro Ile His Gly Val Met Met Lys Ile Thr
 975 980 985
 Val Pro Ile Ala Thr Arg Gly Gly Asn Arg Leu Leu Met Leu Arg Asp
 990 995 1000
 Phe Phe Thr Asp Gln Gly Asn Thr Ser Cys Asn Ile Trp Gly Asn Ser
 1005 1010 1015
 Thr Glu Tyr Arg Ser Thr Pro Thr Glu Glu Asp Leu Ser His Ala Pro
 1020 1025 1030
 Gln Arg Asn His Ser Asn Ser Asp Val Val Ser Ile Ile Cys Asn Leu
 1035 1040 1045 1050
 Arg Leu Ala Pro Ser Gln Glu Thr Ser Phe Tyr Leu Val Gly Asn Leu
 1055 1060 1065
 Trp Leu Thr Ser Leu Lys Ala Leu Lys Tyr Arg Ser Leu Lys Ile Thr
 1070 1075 1080
 Val Asn Ala Ala Leu Gln Arg Gln Phe His Ser Pro Phe Ile Phe Arg
 1085 1090 1095
 Glu Glu Asp Pro Ser Arg Gln Val Thr Phe Glu Ile Ser Lys Gln Glu
 1100 1105 1110
 Asp Trp Gln Val Pro Ile Trp Ile Ile Val Gly Ser Thr Leu Gly Gly
 1115 1120 1125 1130
 Leu Leu Leu Leu Ala Leu Leu Val Leu Ala Leu Trp Lys Leu Gly Phe
 1135 1140 1145
 Phe Lys Ser Ala Lys Arg Lys Arg Glu Pro Gly Leu Gly Pro Ile Pro
 1150 1155 1160
 Lys Glu Leu Lys
 1165

<210> 22
 <211> 1166

<212> PRT
 <213> Mus musculus

<400> 22
 Phe Asn Met Asp Thr Arg Asn Pro Arg Val Ile Ala Gly Pro Ser Ala
 1 5 10 15
 Ala Phe Phe Gly Tyr Thr Val Gln Gln His Asp Ile Ser Gly Lys Lys
 20 25 30
 Trp Leu Val Val Gly Ala Pro Met Glu Thr Asn Gly His Gln Lys Thr
 35 40 45
 Gly Asp Val Tyr Lys Cys Pro Val Thr Gln Gly Asn Cys Thr Lys Leu
 50 55 60
 Asn Leu Gly Arg Val Thr Leu Ser Asn Val Ser Glu Arg Lys Asp Asn
 65 70 75 80
 Met Arg Leu Gly Leu Ser Leu Ala Thr Asn Pro Lys Asp Asn Ser Phe
 85 90 95
 Leu Ala Cys Ser Pro Leu Trp Ser His Glu Cys Gly Ser Ser Tyr Tyr
 100 105 110
 Thr Thr Gly Met Cys Ser Arg Val Asn Ser Asn Phe Arg Phe Ser Lys
 115 120 125
 Thr Val Ala Pro Ala Leu Gln Arg Cys Gln Thr Tyr Met Asp Ile Val
 130 135 140
 Ile Val Leu Asp Gly Ser Asn Ser Ile Tyr Pro Trp Val Glu Val Gln
 145 150 155 160
 His Phe Leu Ile Asn Ile Leu Lys Lys Phe Tyr Ile Gly Pro Gly Gln
 165 170 175
 Ile Gln Val Gly Ile Val Gln Tyr Gly Glu Asp Ala Val His Glu Phe
 180 185 190
 His Leu Asn Asp Tyr Arg Ser Val Lys Asp Val Val Glu Ala Ala Ser
 195 200 205
 His Ile Glu Gln Arg Gly Gly Thr Glu Thr Arg Thr Ala Phe Gly Ile
 210 215 220
 Glu Phe Ala Arg Ser Glu Ala Phe Gln Lys Gly Gly Arg Lys Gly Ala
 225 230 235 240
 Lys Lys Val Met Ile Val Ile Thr Asp Gly Glu Ser His Asp Ser Pro
 245 250 255
 Asp Leu Glu Lys Val Ile Arg Gln Ser Glu Lys Asp Asn Val Thr Arg
 260 265 270
 Tyr Ala Val Ala Val Leu Gly Tyr Tyr Asn Arg Arg Gly Ile Asn Pro
 275 280 285
 Glu Thr Phe Leu Asn Glu Ile Lys Tyr Ile Ala Ser Asp Pro Asp Asp
 290 295 300
 Lys His Phe Phe Asn Val Thr Asp Glu Ala Ala Leu Lys Asp Ile Val
 305 310 315 320
 Asp Ala Leu Gly Asp Arg Ile Phe Ser Leu Glu Gly Thr Asn Lys Asn
 325 330 335
 Glu Thr Ser Phe Gly Leu Glu Met Ser Gln Thr Gly Phe Ser Ser His
 340 345 350
 Val Val Glu Asp Gly Ile Leu Leu Gly Ala Val Gly Ala Tyr Asp Trp
 355 360 365
 Asn Gly Ala Val Leu Lys Glu Thr Ser Ala Gly Lys Val Ile Pro His
 370 375 380
 Arg Glu Ser Tyr Leu Lys Glu Phe Pro Glu Glu Leu Lys Asn His Ala
 385 390 395 400
 Ala Tyr Leu Gly Tyr Thr Val Thr Ser Val Val Ser Ser Arg Gln Gly
 405 410 415
 Arg Val Tyr Val Ala Gly Ala Pro Arg Phe Asn His Thr Gly Lys Val
 420 425 430
 Ile Leu Phe Ser Met His Asn Asn Arg Ser Leu Thr Ile His Gln Ala
 435 440 445
 Leu Arg Gly Glu Gln Ile Gly Ser Tyr Phe Gly Ser Glu Ile Thr Ser

450		455		460
Val Asp Val Asn Asp Asp Arg Val Thr Asp Val Leu Leu Val Gly Ala				
465		470		480
Pro Met Tyr Phe Ser Glu Gly Arg Glu Arg Gly Lys Val Tyr Val Tyr				
	485		490	495
Asn Leu Arg Gln Asn Arg Phe Val Tyr Asn Gly Thr Leu Lys Asp Ser				
	500		505	510
His Ser Tyr Gln Asn Ala Arg Phe Gly Ser Cys Ile Ala Ser Val Gln				
	515		520	525
Asp Leu Asn Gln Asp Ser Tyr Asn Asp Val Val Val Gly Ala Pro Leu				
	530		535	540
Glu Asp Ser His Arg Gly Ala Ile Tyr Ile Phe His Gly Phe Gln Thr				
545		550		560
Asn Ile Leu Lys Lys Pro Met Gln Arg Ile Thr Ala Ser Glu Leu Ala				
	565		570	575
Pro Gly Leu Gln His Phe Gly Cys Ser Ile His Gly Gln Leu Asp Leu				
	580		585	590
Asn Glu Asp Gly Leu Val Asp Leu Ala Val Gly Ala Leu Gly Asn Ala				
	595		600	605
Val Val Leu Trp Ala Arg Pro Val Val Gln Ile Asn Ala Ser Leu His				
	610		615	620
Phe Glu Pro Ser Lys Ile Asn Ile Phe His Lys Asp Cys Lys Arg Asn				
625		630		640
Gly Arg Asp Ala Thr Cys Leu Ala Ala Phe Leu Cys Phe Ile Pro Ile				
	645		650	655
Phe Leu Ala Pro His Phe Gln Thr Ala Thr Val Gly Ile Arg Tyr Asn				
	660		665	670
Ala Thr Met Asp Glu Arg Arg Tyr Met Pro Arg Ala His Leu Asp Glu				
	675		680	685
Gly Gly Asp Gln Phe Thr Asn Arg Ala Val Leu Leu Ser Ser Gly Gln				
	690		695	700
Glu His Cys Gln Arg Ile Asn Phe His Val Leu Asp Thr Ala Asp Tyr				
705		710		720
Val Lys Pro Val Ala Phe Ser Val Glu Tyr Ser Leu Glu Asp Pro Asp				
	725		730	735
Asn Gly Pro Met Leu Asp Asn Gly Trp Pro Thr Thr Leu Arg Val Ser				
	740		745	750
Val Pro Phe Trp Asn Gly Cys Asn Glu Asp Glu His Cys Val Pro Asp				
	755		760	765
Leu Val Leu Asp Ala Arg Ser Asp Leu Pro Thr Ala Met Glu Tyr Cys				
	770		775	780
Gln Arg Val Leu Gly Arg Pro Ala Gln Asp Cys Ser Ser Tyr Thr Leu				
785		790		800
Ser Phe Asp Thr Thr Val Phe Ile Ile Glu Ser Thr Arg Arg Arg Val				
	805		810	815
Ala Val Glu Ala Thr Leu Glu Asn Arg Gly Glu Asn Ala Tyr Ser Ala				
	820		825	830
Val Leu Asn Ile Ser Gln Ser Glu Asn Leu Gln Phe Ala Ser Leu Ile				
	835		840	845
Gln Lys Asp Asp Ser Asp Asn Ser Ile Glu Cys Val Asn Glu Glu Arg				
	850		855	860
Arg Leu His Lys Lys Val Cys Asn Val Ser Tyr Pro Phe Phe Arg Ala				
865		870		880
Lys Ala Lys Val Ala Phe Arg Leu Asp Phe Glu Phe Ser Lys Ser Val				
	885		890	895
Phe Leu His His Leu Gln Ile His Leu Gly Ala Gly Ser Asp Ser His				
	900		905	910
Glu Gln Asp Ser Thr Ala Asp Asp Asn Thr Ala Leu Leu Arg Phe His				
	915		920	925
Leu Lys Tyr Glu Ala Asp Val Leu Phe Thr Arg Ser Ser Ser Leu Ser				
	930		935	940

His Phe Glu Val Lys Ala Asn Ser Ser Leu Glu Ser Tyr Asp Gly Ile
 945 950 955 960
 Gly Pro Pro Phe Asn Cys Val Phe Lys Val Gln Asn Leu Gly Phe Phe
 965 970 975
 Pro Ile His Gly Val Met Met Lys Ile Thr Val Pro Ile Ala Thr Arg
 980 985 990
 Gly Gly Asn Arg Leu Leu Met Leu Arg Asp Phe Phe Thr Asp Gln Gly
 995 1000 1005
 Asn Thr Ser Cys Asn Ile Trp Gly Asn Ser Thr Glu Tyr Arg Ser Thr
 1010 1015 1020
 Pro Thr Glu Glu Asp Leu Ser His Ala Pro Gln Arg Asn His Ser Asn
 1025 1030 1035 1040
 Ser Asp Val Val Ser Ile Ile Cys Asn Leu Arg Leu Ala Pro Ser Gln
 1045 1050 1055
 Glu Thr Ser Phe Tyr Leu Val Gly Asn Leu Trp Leu Thr Ser Leu Lys
 1060 1065 1070
 Ala Leu Lys Tyr Arg Ser Leu Lys Ile Thr Val Asn Ala Ala Leu Gln
 1075 1080 1085
 Arg Gln Phe His Ser Pro Phe Ile Phe Arg Glu Glu Asp Pro Ser Arg
 1090 1095 1100
 Gln Val Thr Phe Glu Ile Ser Lys Gln Glu Asp Trp Gln Val Pro Ile
 1105 1110 1115 1120
 Trp Ile Ile Val Gly Ser Thr Leu Gly Gly Leu Leu Leu Ala Leu
 1125 1130 1135
 Leu Val Leu Ala Leu Trp Lys Leu Gly Phe Phe Lys Ser Ala Lys Arg
 1140 1145 1150
 Lys Arg Glu Pro Gly Leu Gly Pro Ile Pro Lys Glu Leu Lys
 1155 1160 1165

<210> 23
 <211> 22
 <212> PRT
 <213> Mus musculus

<220>
 <221> SIGNAL
 <222> (1)...(22)

<400> 23
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 Pro Gly Phe Thr Asp Thr
 -5

<210> 24
 <211> 1141
 <212> PRT
 <213> Mus musculus

<400> 24
 Met Asp Phe Pro Arg Gly Leu Leu Val Ala Trp Thr Leu Ser Leu Trp
 1 5 10 15
 Pro Gly Phe Thr Asp Thr Phe Asn Met Asp Thr Arg Asn Pro Arg Val
 20 25 30
 Ile Ala Gly Pro Ser Ala Ala Phe Phe Gly Tyr Thr Val Gln Gln His
 35 40 45
 Asp Ile Ser Gly Lys Lys Trp Leu Val Val Gly Ala Pro Met Glu Thr
 50 55 60
 Asn Gly His Gln Lys Thr Gly Asp Val Tyr Lys Cys Pro Val Thr Gln
 65 70 75 80
 Gly Asn Cys Thr Lys Leu Asn Leu Gly Arg Val Thr Leu Ser Asn Val

Phe	His	Gly	Phe	Gln	Thr	Asn	Ile	Leu	Lys	Lys	Pro	Met	Gln	Arg	Ile
			580					585					590		
Thr	Ala	Ser	Glu	Leu	Ala	Pro	Gly	Leu	Gln	His	Phe	Gly	Cys	Ser	Ile
		595					600					605			
His	Gly	Gln	Leu	Asp	Leu	Asn	Glu	Asp	Gly	Leu	Val	Asp	Leu	Ala	Val
	610					615					620				
Gly	Ala	Leu	Gly	Asn	Ala	Val	Val	Leu	Trp	Ala	Arg	Pro	Val	Val	Gln
625					630					635					640
Ile	Asn	Ala	Ser	Leu	His	Phe	Glu	Pro	Ser	Lys	Ile	Asn	Ile	Phe	His
			645						650					655	
Lys	Asp	Cys	Lys	Arg	Asn	Gly	Arg	Asp	Ala	Thr	Cys	Leu	Ala	Ala	Phe
		660						665					670		
Leu	Cys	Phe	Ile	Pro	Ile	Phe	Leu	Ala	Pro	His	Phe	Gln	Thr	Ala	Thr
		675					680					685			
Val	Gly	Ile	Arg	Tyr	Asn	Ala	Thr	Met	Asp	Glu	Arg	Arg	Tyr	Met	Pro
	690					695					700				
Arg	Ala	His	Leu	Asp	Glu	Gly	Gly	Asp	Gln	Phe	Thr	Asn	Arg	Ala	Val
705					710					715					720
Leu	Leu	Ser	Ser	Gly	Gln	Glu	His	Cys	Gln	Arg	Ile	Asn	Phe	His	Val
			725						730					735	
Leu	Asp	Thr	Ala	Asp	Tyr	Val	Lys	Pro	Val	Ala	Phe	Ser	Val	Glu	Tyr
		740						745					750		
Ser	Leu	Glu	Asp	Pro	Asp	Asn	Gly	Pro	Met	Leu	Asp	Asn	Gly	Trp	Pro
		755					760					765			
Thr	Thr	Leu	Arg	Val	Ser	Val	Pro	Phe	Trp	Asn	Gly	Cys	Asn	Glu	Asp
	770					775					780				
Glu	His	Cys	Val	Pro	Asp	Leu	Val	Leu	Asp	Ala	Arg	Ser	Asp	Leu	Pro
785					790					795					800
Thr	Ala	Met	Glu	Tyr	Cys	Gln	Arg	Val	Leu	Gly	Arg	Pro	Ala	Gln	Asp
			805						810					815	
Cys	Ser	Ser	Tyr	Thr	Leu	Ser	Phe	Asp	Thr	Thr	Val	Phe	Ile	Ile	Glu
		820						825					830		
Ser	Thr	Arg	Arg	Arg	Val	Ala	Val	Glu	Ala	Thr	Leu	Glu	Asn	Arg	Gly
		835					840					845			
Glu	Asn	Ala	Tyr	Ser	Ala	Val	Leu	Asn	Ile	Ser	Gln	Ser	Glu	Asn	Leu
	850					855					860				
Gln	Phe	Ala	Ser	Leu	Ile	Gln	Lys	Asp	Asp	Ser	Asp	Asn	Ser	Ile	Glu
865					870					875					880
Cys	Val	Asn	Glu	Glu	Arg	Arg	Leu	His	Lys	Lys	Val	Cys	Asn	Val	Ser
			885						890					895	
Tyr	Pro	Phe	Phe	Arg	Ala	Lys	Ala	Lys	Val	Ala	Phe	Arg	Leu	Asp	Phe
		900						905					910		
Glu	Phe	Ser	Lys	Ser	Val	Phe	Leu	His	His	Leu	Gln	Ile	His	Leu	Gly
	915						920					925			
Ala	Gly	Ser	Asp	Ser	His	Glu	Gln	Asp	Ser	Thr	Ala	Asp	Asp	Asn	Thr
	930					935					940				
Ala	Leu	Leu	Arg	Phe	His	Leu	Lys	Tyr	Glu	Ala	Asp	Val	Leu	Phe	Thr
945					950					955					960
Arg	Ser	Ser	Ser	Leu	Ser	His	Phe	Glu	Val	Lys	Ala	Asn	Ser	Ser	Leu
			965						970					975	
Glu	Ser	Tyr	Asp	Gly	Ile	Gly	Pro	Pro	Phe	Asn	Cys	Val	Phe	Lys	Val
			980					985					990		
Gln	Asn	Leu	Gly	Phe	Phe	Pro	Ile	His	Gly	Val	Met	Met	Lys	Ile	Thr
	995						1000					1005			
Val	Pro	Ile	Ala	Thr	Arg	Gly	Gly	Asn	Arg	Leu	Leu	Met	Leu	Arg	Asp
	1010					1015					1020				
Phe	Phe	Thr	Asp	Gln	Gly	Asn	Thr	Ser	Cys	Asn	Ile	Trp	Gly	Asn	Ser
1025					1030					1035					1040
Thr	Glu	Tyr	Arg	Ser	Thr	Pro	Thr	Glu	Glu	Asp	Leu	Ser	His	Ala	Pro
				1045					1050					1055	
Gln	Arg	Asn	His	Ser	Asn	Ser	Asp	Val	Val	Ser	Ile	Ile	Cys	Asn	Leu

	1060		1065		1070										
Arg	Leu	Ala	Pro	Ser	Gln	Glu	Thr	Ser	Phe	Tyr	Leu	Val	Gly	Asn	Leu
	1075						1080					1085			
Trp	Leu	Thr	Ser	Leu	Lys	Ala	Leu	Lys	Tyr	Arg	Ser	Leu	Lys	Ile	Thr
	1090					1095					1100				
Val	Asn	Ala	Ala	Leu	Gln	Arg	Gln	Phe	His	Ser	Pro	Phe	Ile	Phe	Arg
1105					1110					1115				1120	
Glu	Glu	Asp	Pro	Ser	Arg	Gln	Val	Thr	Phe	Glu	Ile	Ser	Lys	Gln	Glu
			1125						1130					1135	
Asp	Trp	Gln	Val	Pro											
			1140												

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 <213> Mus musculus

	<400> 25														
Asp	Ile	Val	Ile	Val	Leu	Asp	Gly	Ser	Asn	Ser	Ile	Tyr	Pro	Trp	Val
1				5					10					15	
Glu	Val	Gln	His	Phe	Leu	Ile	Asn	Ile	Leu	Lys	Lys	Phe	Tyr	Ile	Gly
			20					25					30		
Pro	Gly	Gln	Ile	Gln	Val	Gly	Ile	Val	Gln	Tyr	Gly	Glu	Asp	Ala	Val
		35					40					45			
His	Glu	Phe	His	Leu	Asn	Asp	Tyr	Arg	Ser	Val	Lys	Asp	Val	Val	Glu
	50					55					60				
Ala	Ala	Ser	His	Ile	Glu	Gln	Arg	Gly	Gly	Thr	Glu	Thr	Arg	Thr	Ala
65					70					75					80
Phe	Gly	Ile	Glu	Phe	Ala	Arg	Ser	Glu	Ala	Phe	Gln	Lys	Gly	Gly	Arg
				85					90					95	
Lys	Gly	Ala	Lys	Lys	Val	Met	Ile	Val	Ile	Thr	Asp	Gly	Glu	Ser	His
			100					105					110		
Asp	Ser	Pro	Asp	Leu	Glu	Lys	Val	Ile	Arg	Gln	Ser	Glu	Lys	Asp	Asn
		115					120					125			
Val	Thr	Arg	Tyr	Ala	Val	Ala	Val	Leu	Gly	Tyr	Tyr	Asn	Arg	Arg	Gly
	130				135						140				
Ile	Asn	Pro	Glu	Thr	Phe	Leu	Asn	Glu	Ile	Lys	Tyr	Ile	Ala	Ser	Asp
145					150					155					160
Pro	Asp	Asp	Lys	His	Phe	Phe	Asn	Val	Thr	Asp	Glu	Ala	Ala	Leu	Lys
				165					170					175	
Asp	Ile	Val	Asp	Ala	Leu										
			180												

<210> 26
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	<400> 26														
Ala	Phe	Phe	Gly	Tyr	Thr	Val	Gln	Gln	His	Asp	Ile	Ser	Gly	Lys	Lys
1					5				10					15	
Trp	Leu	Val	Val	Gly	Ala	Pro	Met	Glu	Thr	Asn	Gly	His	Gln	Lys	Thr
			20					25					30		
Gly	Asp	Val	Tyr												
			35												

<210> 27
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<400> 27
 Asp Asn Ser Phe Leu Ala Cys Ser Pro Leu Trp Ser His Glu Cys Gly
 1 5 10 15
 Ser Ser Tyr Tyr Thr Thr Gly Met Cys Ser Arg Val Asn Ser Asn Phe
 20 25 30
 Arg Phe Ser Lys Thr Val Ala Pro Ala Leu Gln
 35 40

<210> 28
 <211> 26
 <212> PRT
 <213> Mus musculus

<400> 28
 Ser Gln Thr Gly Phe Ser Ser His Val Val Glu Asp Gly Ile Leu Leu
 1 5 10 15
 Gly Ala Val Gly Ala Tyr Asp Trp Asn Gly
 20 25

<210> 29
 <211> 35
 <212> PRT
 <213> Mus musculus

<400> 29
 His Ala Ala Tyr Leu Gly Tyr Thr Val Thr Ser Val Val Ser Ser Arg
 1 5 10 15
 Gln Gly Arg Val Tyr Val Ala Gly Ala Pro Arg Phe Asn His Thr Gly
 20 25 30
 Lys Val Ile
 35

<210> 30
 <211> 39
 <212> PRT
 <213> Mus musculus

<400> 30
 Ser Tyr Phe Gly Ser Glu Ile Thr Ser Val Asp Val Asn Asp Asp Arg
 1 5 10 15
 Val Thr Asp Val Leu Leu Val Gly Ala Pro Met Tyr Phe Ser Glu Gly
 20 25 30
 Arg Glu Arg Gly Lys Val Tyr
 35

<210> 31
 <211> 36
 <212> PRT
 <213> Mus musculus

<400> 31
 Ala Arg Phe Gly Ser Cys Ile Ala Ser Val Gln Asp Leu Asn Gln Asp
 1 5 10 15
 Ser Tyr Asn Asp Val Val Val Gly Ala Pro Leu Glu Asp Ser His Arg
 20 25 30
 Gly Ala Ile Tyr
 35

<210> 32
 <211> 39
 <212> PRT

<213> Mus musculus

<400> 32
Gln His Phe Gly Cys Ser Ile His Gly Gln Leu Asp Leu Asn Glu Asp
1 5 10 15
Gly Leu Val Asp Leu Ala Val Gly Ala Leu Gly Asn Ala Val Val Leu
20 25 30
Trp Ala Arg Pro Val Val Gln
35

<210> 33
<211> 23
<212> PRT
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<400> 33
Ile Trp Ile Ile Val Gly Ser Thr Leu Gly Gly Leu Leu Leu Ala
1 5 10 15
Leu Leu Val Leu Ala Leu Trp
20

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<211> 24
<212> PRT
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<400> 34
Lys Leu Gly Phe Phe Lys Ser Ala Lys Arg Lys Arg Glu Pro Gly Leu
1 5 10 15
Gly Pro Ile Pro Lys Glu Leu Lys
20

<210> 35
<211> 56
<212> PRT
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<400> 35
Pro Gly Ser Tyr Phe Gly Tyr Ser Val Ala Gly Val Gly Asp Leu Asn
1 5 10 15
Gly Asp Lys Ser Gly Tyr Pro Asp Leu Leu Val Gly Ala Pro Arg
20 25 30
Gly Ala Val Tyr Val Tyr Phe Gly Ser Ser Asn Ser Gly Gly Gly Arg
35 40 45
Cys Ile Pro Leu Gln Asn Leu Ser
50 55

<210> 36
<211> 54
<212> PRT
<213> Homo sapiens

<400> 36
Arg Thr Ala Phe Phe Gly Tyr Thr Val Gln Gln His Asp Ile Ser Gly
1 5 10 15
Asn Lys Trp Leu Val Val Gly Ala Pro Leu Glu Thr Asn Gly Tyr Gln
20 25 30
Lys Thr Gly Asp Val Tyr Lys Cys Pro Val Ile His Gly Asn Cys Thr
35 40 45
Lys Leu Asn Leu Gly Arg
50

<210> 37
 <211> 52
 <212> PRT
 <213> Homo sapiens

<400> 37
 His Gly Ala Tyr Leu Gly Tyr Thr Val Thr Ser val Val Ser Ser Arg
 1 5 10 15
 Gln Gly Arg Val Tyr Val Ala Gly Ala Pro Arg Phe Asn His Thr Gly
 20 25 30
 Lys Val Ile Leu Phe Thr Met His Asn Asn Arg Ser Leu Thr Ile His
 35 40 45
 Gln Ala Met Arg
 50

<210> 38
 <211> 57
 <212> PRT
 <213> Homo sapiens

<400> 38
 Ile Gly Ser Tyr Phe Gly Ser Glu Ile Thr Ser Val Asp Ile Asp Gly
 1 5 10 15
 Asp Gly Val Thr Asp Val Leu Leu Val Gly Ala Pro Met Tyr Phe Asn
 20 25 30
 Glu Gly Arg Glu Arg Gly Lys Val Tyr Val Tyr Glu Leu Arg Gln Asn
 35 40 45
 Arg Phe Val Tyr Asn Gly Thr Leu Lys
 50 55

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<400> 39
 Gln Asn Ala Arg Phe Gly Ser Ser Ile Ala Ser Val Arg Asp Leu Asn
 1 5 10 15
 Gln Asp Ser Tyr Asn Asp Val Val Val Gly Ala Pro Leu Glu Asp Asn
 20 25 30
 His Ala Gly Ala Ile Tyr Ile Phe His Gly Phe Arg Gly Ser Ile Leu
 35 40 45
 Lys Thr Pro Lys Gln Arg Ile Thr
 50 55

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<220>
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<400> 40
 Gly Leu Gln Tyr Phe Gly Cys Ser Ile His Gly Gln Leu Asp Leu Asn
 1 5 10 15
 Glu Asp Gly Leu Ile Asp Leu Ala Val Gly Ala Leu Gly Asn Ala Val
 20 25 30
 Ile Leu Trp Ser Arg Pro Val Val Gln Ile Asn Ala Ser Leu His Phe
 35 40 45

Glu Pro Ser Lys Ile Asn Ile
50 55